

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference DB 770 PCT	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) FOR FURTHER ACTION	
International application No. PCT/IT99/00380	International filing date (day/month/year) 23/11/1999	Priority date (day/month/year) 25/11/1998
International Patent Classification (IPC) or national classification and IPC H04Q11/04		
Applicant ITALTEL SPA et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 13/06/2000	Date of completion of this report 12.02.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Schweitzer, J-C Telephone No. +49 89 2399 8963 <div style="text-align: right;">  </div>

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

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SIEMENS INFORMATION AND
COMMUNICATION NETWORKS S.P.A.
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PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing (day/month/year)	12.02.2001
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Applicant's or agent's file reference DB 770 PCT	IMPORTANT NOTIFICATION
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International application No. PCT/IT99/00380	International filing date (day/month/year) 23/11/1999	Priority date (day/month/year) 25/11/1998
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Applicant ITALTEL SPA et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/	Authorized officer
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**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IT99/00380

I. Basis of the report

1. This report has been drawn on the basis of *(substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments (Rules 70.16 and 70.17).):*

Description, pages:

1-28 as originally filed

Claims, No.:

1-27 as originally filed

Drawings, sheets:

1/14-14/14 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IT99/00380

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims 1 - 27
	No: Claims
Inventive step (IS)	Yes: Claims 1 - 27
	No: Claims
Industrial applicability (IA)	Yes: Claims 1 - 27
	No: Claims

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

Concerning section V.2 (reasoned statement under Article 35 (2) PCT)

Claim 1 relates to a method for the statistical multiplexing of transmission flows conveying ATM traffic, wherein said flows generate transmission queues of cells shared into functional blocks and a minimum band is guaranteed to some single flows on the multiplexed flow.

Such a statistical multiplexing method using a Weighted Fair Queuing (WFQ) algorithm for assigning opportune quantities of bandwidth, evaluated on statistical basis, between the different queues within a single block, is already known from the **article by Briem et al. [XVI World Telecom Congress Proceedings]**, acknowledged in the opening part of the description. In said prior art method, a Scheduler Block Scheduler (SBS) is used to dynamically assign bandwidth between the different blocks.

The method of the invention, by contrast, uses a double WFQ technique, the WFQ algorithm being applied both at block level and at queue level. Such a method as claimed, which permits to extend the dynamic sharing of the available band also to the block level, is neither taught, nor rendered obvious, alone or in combination, by the prior art documents cited in the International Search Report. The cited reference **EP-A-0 843 499** corresponds to the prior art discussed in relation with the Italian patent application mentioned at page 5, line 13, wherein the WFQ algorithm is applied to the transmission queues only.

Claim 1 is therefore novel and considered to involve the required inventive step, Articles 33(2) and (3) PCT. The subject-matter of claim 1 is also industrially applicable.

The same considerations apply to independent **claim 13**, which is directed to a statistical multiplexer and corresponds in structural terms essentially to method claim 1. Claim 13, therefore, equally meets all the requirements of Article 33 PCT.

Dependent **claims 2 to 12 and 14 to 27** relate to further implementing details of the method and multiplexer defined by the independent claims to which they refer, respectively, and are thus equally novel, inventive and industrially applicable.

Concerning section VII (form and contents).

On page 5, line 13, the reference to the unpublished Italian patent application should be replaced by its application number, i.e. **EP-A-0 843 499**.